

Association Between Mindfulness and Work-Life Balance in Medical Faculty: Sleep Quality as a Mediator

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Abstract

Background: Achieving the balance between work and life is a serious challenge for faculty members. The present investigation aimed to examine the association between trait mindfulness and work-life balance among faculty members and determine the importance of sleep quality in this relationship.

Objectives: This study aimed to evaluate the association between mindfulness, work-life balance, and sleep quality in medical faculty members.

Methods: The present cross-sectional study determined the association of mindfulness and work-life balance with sleep quality among 255 medical faculty members using the Work-Life Balance Perceptions Questionnaire, Pittsburgh Sleep Quality Index, and Five Facet Mindfulness Questionnaire. Data analysis was carried out through SPSS software (version 20) and Amos software (version 20). The data were analyzed using structural equation modeling.

Results: A positive correlation was observed between mindfulness and work-life balance ($r = 0.25, P = 0.04$). A negative correlation was noticed between impaired sleep quality with mindfulness ($r = -0.27, P = 0.03$) and work-life balance ($r = -0.31, P = 0.02$). Sleep quality played a mediating role in the association between mindfulness and work-life balance.

Conclusion: This study supports the advantages of mindfulness in work-life balance. The enhancement of mindfulness in medical faculty members helps improve their sleep quality and can be effective in enhancing their work-life balance.

Keywords: Mindfulness; Work-Life Balance; Sleep Quality; Medical Faculty

Background

Faculty members have a wide range of inherent roles in their job, including teaching, consulting, research, and services (1). On average, faculty members work more than 56 hours a week (2) and often have to work overtime due to university requirements (1, 3-6). The nature of the work and the numerous demands that faculty members face in their job, some of which have been mentioned above, severely affect their work-life balance (7). Based on Grant-Vallone and Ensher's study (2017), faculty members are of the opinion that work-life balance is always in decline and might not be achievable (8). One of the health-related factors among faculty members that affects work-life balance and is affected by it is sleep quality. A previous study showed

that work-life balance, independently of other variables, was related to sleep quality (9).

Crain et al. demonstrated sleep quantity and quality as significant predictors of work-life balance. They demonstrated that the loss of sleep and sleep disorders affect basic behavioral patterns, which have negative effects on family health and interpersonal communication (10). Studies have shown that faculty members often have to work late at home, and their minds are busy with work issues even when they go to bed, disrupting their sleep quality (4, 11, 12).

To date, the significance of sleep quality and work-life balance for employees' well-being has been well documented, and numerous organizational policies are designed and implemented to help individuals to manage work and family demands (13). In this context,

individual cognitive tactics have been paid less attention in the literature, and solely a few investigations have considered the spontaneous behaviors and individual actions that employees perform to achieve work-life balance. However, the impacts of individual cognitive initiatives and strategies to achieve the balance between work and non-work roles are undeniable (9, 10, 14).

One of the cognitive strategies that its positive effects on clinical and nonclinical outcomes have been confirmed in a substantial body of literature is mindfulness (15, 16). Mindfulness is a clear consciousness of what is happening inwardly and is the awareness of outside (e.g., sounds) and inside (e.g., emotions) present-instant states and events nonjudgmentally, leading to developing a lasting and nonreactive awareness that can release individuals from auto-thinking, habits, and unhealthy behavior patterns, thereby playing an important role in behavioral regulation (17). In addition, mindfulness can bring health and happiness by adding clarity and vitality to the experience (18).

One theory that supports the hypothesis of the impact of mindfulness on work-life balance and sleep quality is the boundary theory. This theory explains that individuals establish boundaries that separate the areas of work and home and then use behavioral, temporal, and communication strategies to manage boundaries (19). Mindfulness helps employees set boundaries (when their minds engage with work-related thoughts) by restoring awareness to the present, thereby getting rid of those thoughts (20).

Another theory on which the present study is based is the role-balance theory (21). According to this theory, mindfulness positively affects work-life balance. Work-life balance is associated with the full performance of each role while the person is performing it. According to this approach, the mindful person can pay full attention to the current role without automatically thinking of another thing. Therefore, if a person has high mindfulness characteristics, he/she is better able to focus on the current role alone without thinking about another role, which in turn increases his/her ability to balance work and life (22). Additionally, distancing from automatic thinking as a feature of mindfulness helps a person get rid of day work-related experiences and stresses in bed earlier and leads to better sleep (23). Abundant evidence has demonstrated the link between trait mindfulness and sleep quality (14, 23-25). Since faculty members are a major resource in academic institutions, understanding the factors affecting their work-life balance and sleep quality is essential.

Objectives

This study aimed to evaluate the association between mindfulness, work-life balance, and sleep quality in medical faculty members.

Methods

Participants: This cross-sectional study investigated trait mindfulness, work-life balance, and sleep quality of the faculty members working at Qom University of Medical Sciences, Qom, Iran, in 2020. Sampling was performed through the census method. The sample size was determined to be 193 with respect to the minimum correlation coefficient between the study variables (approximated at 0.2 by a similar study) (17). In order to prevent the possible loss of samples and the likelihood of not completing questionnaires, they were presented to all faculty members of the university who have been working in the research environment at least 44-54 hours a week in the past year and agreed to participate in the study.

Measures

Work-Life Balance Perceptions Questionnaire: Work-Life Balance Perceptions Questionnaire designed by Allen et al. (2010) was employed for the measurement of work-life balance. This questionnaire includes five items, such as I am able to balance work demands and the wishes of my family, I experience a high level of work-life balance, I am struggling with the balance between work and life, and I am satisfied with the balance I have got between my family life and work life. A 5-point Likert is used to score the responses from “strongly opposed” to “fully agree”. The minimum and maximum scores of the questionnaire were 1 and 5 (26). In the present study, the questionnaire was translated into Persian by the method of translation and back-translation. Then, to standardize and validate the questionnaire, the content validity ratio (0.67) and content validity index (0.76) were determined with 20 members of the nursing, public health, medical, and psychology faculties. The reliability was confirmed with Cronbach’s alpha 0.78.

Pittsburgh Sleep Quality Index: The Pittsburgh Sleep Quality Index (PSQI) is among the greatest instruments for the measurement of sleep quality. The questionnaire was designed in 1989 by Dr. Boyce et al. at the Pittsburgh Psychiatric Institute (27). The original version of the questionnaire has nine items; however, since the fifth item includes 10 subcategories, the whole questionnaire has 19 items scored on a 4-point Likert scale between 0-3. The questionnaire comprises seven components, namely subjective sleep quality, sleep delay (sleep latency), sleep duration, sleep efficiency (habitual sleep

efficiency), sleep disturbances, usage of sleeping medications, and daily dysfunction. The scores of each component range from 0 to 3. The sum of the seven components' scores indicates a universal PSQI score ranging from 0 to 21. Higher scores are indicative of lower sleep quality. The PSQI questionnaire has been widely employed to evaluate the sleep quality of nonclinical populations and patients with psychiatry. Moreover, the PSQI questionnaire has been a valid and reliable measure of sleep quality (28, 29). The questionnaire's internal consistency was obtained by the use of Cronbach's alpha 0.83. The Iranian version had validity and reliability of 0.86 and 0.891, respectively (30). In this investigation, Cronbach's alpha was calculated at 0.88.

Five Facet Mindfulness Questionnaire: Five Facet Mindfulness Questionnaire (FFMQ) with 39-item was designed by Baer et al. to measure mindfulness. The FFMQ has five dimensions, including mind awareness (8 items), description (8 items), conscious performance (8 items), lack of judgment about internal experiences (8 items), and lack of response to internal experiences (7 items) (31). Average scores are calculated by summing the responses and indicating the agreement level with each subscale (1=rarely true, 5=always true) with a total score range of 39-195. A higher score is indicative of someone who is more mindful in everyday life. An investigation in Iran has confirmed FFMQ's validity and reliability (32). The current investigation corroborated its reliability by Cronbach's alpha of 0.88.

Ethical Considerations

The admission of samples was completely voluntary. The current study received the approval of the Ethics Committee of Qom University of Medical Sciences (IR.MUQ.REC.1395.103). Information was collected and stored confidentially and was used only for research purposes.

Statistical Analysis

Statistical analysis was performed on 255 questionnaires that were fully answered. Initially, Pearson's test was used due to the normal distribution of the data. The Pearson correlation coefficient was carried out to test the associations between the study's latent variables.

Then, to analyze the mediation effect, a two-step procedure was employed, which was introduced by Anderson and Gerbing (33). The first step in this procedure is testing the measurement model of the three latent variables to demonstrate the level to which each of the three latent variables was indicated by its indicators. In the second stage, in the case of the acceptance of the confirmatory measurement model in the final step, the

structural model was tested. The mediation analysis was performed in Amos software (version 20) through the maximum likelihood estimation. In the two steps mentioned above, the adequacy of the model was evaluated using four indices, namely the ratio of the chi-square statistic to the degrees of freedom, the Root Mean Square Error of Approximation (RMSEA), the comparative fit index (CFI), and the Tucker-Lewis Index (TLI). According to Barrelt (2007) (34), a model was deemed to be a good fit if the Chi-square statistic divided by degree of freedom was below 3, RMSEA was below 0.08, and both CFI and TLI were above 0.9. Moreover, the level of significance was regarded as < 0.05.

Results

The study population (n = 255) consisted of 57% female, 57.3% married, 34.5% with master's degrees, 59.7% with Ph.D., and 6.6% specialists, with a mean age and work experience of 35.58 ± 7.61 and 10.51 ± 7.14 years, respectively.

Descriptive Data and Correlation Coefficients

The mean scores of sleep quality, work-life balance, and mindfulness were 5.29 ± 2.6, 133.88 ± 4, and 103.29 ± 13.92, respectively. Table 1 tabulates the correlation coefficients of the study variables. The results showed a positive correlation between work-life balance and mindfulness (r = 0.25, P = 0.041). Nevertheless, a negative correlation was noticed between sleep quality with mindfulness (r = -0.27, P = 0.031) and work-life balance (r = -0.31, P = 0.021). Since a higher score is indicative of lower sleep quality in the sleep quality questionnaire, the results indicated that higher mindfulness is associated with better sleep quality. The same applies to the association between sleep quality and work-life balance, in the sense that there is an association between better sleep quality and better work-life balance.

Table 1. Descriptive Data and Linear Correlations of Study Variables

| Variable | 1 | 2 | 3 |
|-------------------|---------|--------|---|
| Sleep quality | 1 | | |
| Work-life balance | -0.317* | 1 | |
| Mindfulness | -0.273* | 0.254* | 1 |

*P < 0.05

Measurement Model

In this study, confirmatory factor analysis (CFA) was employed to evaluate the fit of the measurement model to the study data. A satisfactory fit was observed through the first test of the measurement model (the Chi-square statistic divided by degree of freedom = 1.74;

RMSEA = 0.061; CFI = 0.89; TLI = 0.91). There was significance regarding all the factor loadings for the indicators on the latent variables ($P < 0.05$), indicating that all the latent variables were well-characterized by their observed variables.

Structural Model

Structural equation modeling was utilized to assess the mediating impact of sleep quality. Initially, the direct impact of mindfulness on work-life balance was checked without a mediator.

Table 2. Path Coefficient and T-test Statistic of Main Hypothesis of Research Conceptual Model

| First hypothesis | Path | Path coefficient | T-test statistic | Conclusion |
|------------------|-------------------------------|------------------|------------------|--------------|
| First | Mindfulness Work-life balance | 0.26 | 1.625 | Unacceptable |

As a result, the first hypothesis was not acceptable.

Now, the hypothesis related to the mediator variable is evaluated. The Sobel test was used to check the status of this variable. At the significance level of 0.05, if the value obtained from the analysis of this test is higher than 1.96, the hypothesis is significant and acceptable. This test was used for the significance of the mediating role of one variable in the association between the two other variables.

Second Hypothesis: There is a significant association between mindfulness and work-life balance through the mediation of sleep quality. The Sobel test was used to investigate the effect of sleep quality as a mediating variable on the association between mindfulness and work-life balance. The value of this test for this study was 6.28, which showed that sleep quality as a mediating variable had a positive and remarkable effect on the association between mindfulness and work-life balance (Table 3).

As Figure 1 shows, all the path coefficients except the path from mindfulness to work-life balance were statistically significant. In addition, the findings revealed a good fit of the model (the Chi-square statistic divided by degree of freedom = 1.55; RMSEA = 0.05; CFI = 0.93; TLI = 0.91).

Discussion

In this study which was done on 255 faculty members of two medical universities (Islamic Azad University of Qom and Qom University of Medical Sciences), the findings showed that trait mindfulness was associated with work-life balance and sleep quality, as the more mindful faculty members reported more work-life balance and better sleep quality. Other findings showed that sleep quality had a mediating role in the association between mindfulness and work-life balance. The aforementioned findings are consistent with Allen et al.'s findings, who stated that more mindfulness was associated with more outstanding work-life balance and better sleep quality.

First Hypothesis: There is a significant association between mindfulness and work-life balance. According to Table 2, the CFA of the first hypothesis of the conceptual model can be examined. At a 0.05 level of significance, the value of the t-test statistic must be higher than 1.96 to be acceptable. For the first hypothesis, the standard path coefficient between mindfulness and work-life balance was 0.26, which was not significant ($\beta = 0.26, P = 0.06$).

In Allen et al.'s study, sleep quality was identified as a mediator in the association between mindfulness and work-life balance (14).

In addition, the findings are consistent with Michel et al.'s findings which showed that participants who did mindfulness practices showed better psychological disconnection from work. Michel et al. concluded that practicing mindfulness is an effective way to deal with work-associated cognition, emotions, and discharged energy levels and helps obtain work-life balance (20). Other studies demonstrated that better sleep quality is associated with more outstanding work-life facilitation and less work-life conflict (14, 34).

The above-mentioned findings are confirmed by boundary theory assumptions; accordingly, for the reduction of undesirable psychological preoccupation with occupational concerns, it is necessary for employees to find the most suitable way to divide home and work-life sections (19). Mindfulness enables individuals to fully immerse themselves in each role when engaged in it (35, 36). This feature can facilitate establishing and managing boundaries between life and work domains and makes individuals be able to get away from work stress and relax their brains during sleep time. Therefore, having a good sleep will give them better energy to do things tomorrow.

A previous study has shown that struggling with work-associated issues, stresses, and worries during the non-work period damages family roles and hurts the work-family balance (20). Moreover, the automatic activity of negative thoughts and feelings when going to bed is one of the leading causes of insomnia (37).

Other studies have suggested that even a minimum of mindfulness meditation can help tranquilize hyperactive minds and enhance sleep (38). In explanation, pre-sleep ruminations and preoccupations also increase an individual's allostatic load, and poor sleep quality has destructive effects on the basic patterns of behavior that, in turn, can negatively impact

interpersonal relationships and family health (39). For instance, skipping only one night of sleep results in neurological changes that compromise the brain’s ability to fulfill tasks and manage emotions, leading to more impulsive reactions to negative experiences (40). Another study has confirmed that mindfulness allows every activity to be done with full attention and

concentration at the allotted time, and the mind gets rid of dealing with several issues simultaneously (14, 41), which is an excellent way to deal with long working hours and excessive variety of tasks that resulted in reduced hours spent with family, loss of leisure times, and poor sleep quality in faculty members (1, 20).

Table 3. Sobel Test Statistic Related to Mediator Variable

| Second hypothesis | Path | β | Standard deviation | Sobel test statistic | Conclusion |
|-------------------|--|---------|--------------------|----------------------|------------|
| Second | Indirect effect Mindfulness Work-life balance | 0.14 | 0.20 | 6.2833 | Acceptable |

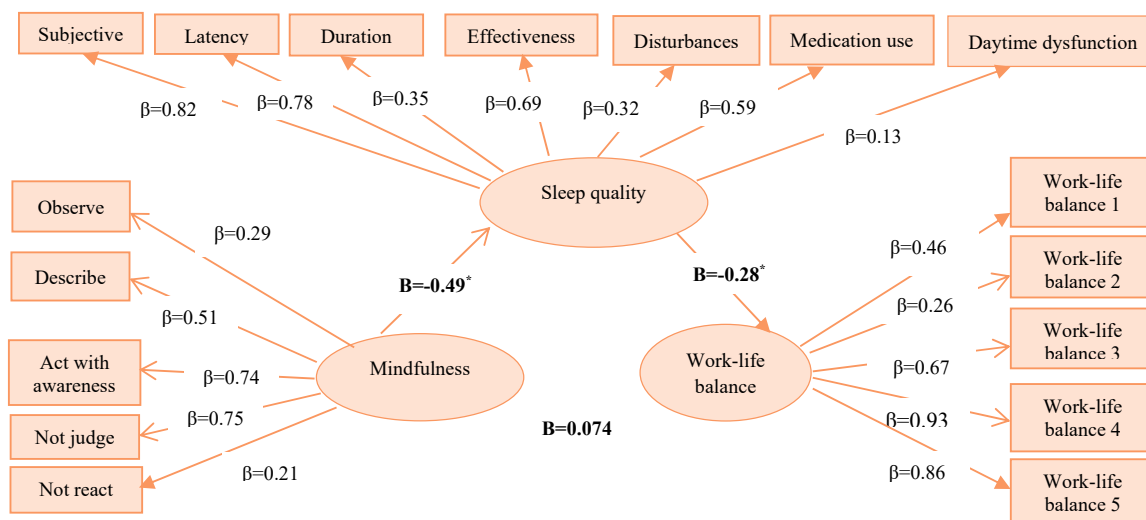


Figure 1. Calculations of Standardized Parameters of Final Structural Model (*P<0.05)

Limitations: There are several limitations in the current investigation. The cross-sectional method limits the proof of causal relationships between variables. Therefore, future intervention studies are recommended to assess causal relationships. This study was performed on a sample of medical faculty members which reduces the possibility of generalization to other populations. Future studies are proposed on individuals with diverse occupations.

The method of data collection was self-report. Therefore, using more objective methods, such as actigraphy, adds to the validity of the findings. Interventional research is proposed to investigate the impact of mindfulness-based interventions on the enhancement of sleep quality and work-life balance of faculty members.

The findings of the current paper have several critical applied uses for organizations. Currently, most work-life balance interventions for faculty members have focused on organizational policies. According to the present study’s

findings, considering individual interventions, such as mindfulness-based interventions, might have excellent results in sleep quality and work-life balance.

Conclusion

Faculty members with higher mindfulness have better sleep quality and more work-life balance. Sleep quality can mediate the association between mindfulness and work-life balance. As a result, improving mindfulness through proper mindfulness training might help enhance sleep quality and increase work-life balance among medical faculty members.

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